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**Report of the Actuary on the
Annual Valuation of the
Retirement System for Employees of
the City of Cincinnati**

Retiree Health Benefits Report

**Prepared as of December 31, 2017
and Approved by the Board of
Trustees on June 7, 2018**





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

June 7, 2018

Board of Trustees
Cincinnati Retirement System
801 Plum Street, Suite 328
Cincinnati, OH 45202

Members of the Board:

We are pleased to submit the results of the retiree health benefits actuarial valuation of the Retirement System for Employees of the City of Cincinnati (CRS) prepared as of December 31, 2017. The purpose of this report is to measure the funded status of the Retiree Health Benefits Plan (Plan) for CRS as of December 31, 2017, and to recommend actuarially determined contribution rates for the fiscal year ending June 30, 2019. The information needed for the City under Governmental Accounting Standards Board Statements No. 74 and 75 (GASB 74 and 75) will be provided in a separate report. However, we have provided a summary of recent financial accounting information, as well as some related historical accounting exhibits, in Section VI for reference purposes,

Actuarially determined contribution (ADC) rates for the fiscal year ending on June 30, 2019 were developed for CRS's Plan based on obligations measured using the Entry Age Normal (Level Percentage of Pay) actuarial cost method and assets measured using the "five-year smoothed value" asset valuation method. Gains and losses reflected in the unfunded accrued liability are being amortized by level annual contributions over an open 30-year period. Based on the actuarial valuation results contained in this report, it is recommended that employer contributions to CRS be set at a rate of 2.58% of payroll (approximately \$4,442,000) for the City's fiscal year ending June 30, 2019.

Since the previous valuation, we updated the initial per capita health care costs, the contribution rates for those retirees participating in the Select Plan and the Model Plan, the rates of health care inflation used to project the per capita health care costs, and health benefit plan participation assumptions to reflect CRS's recent experience.

Under the Collaborative Settlement Agreement (CSA), the City must fund retiree health benefits at "actuarially appropriate levels". As the term "actuarially appropriate levels" is vague and the amount has yet to be defined, we recommend the Board conduct an evaluation of the long-term funding of retiree health benefits to ensure the payment of future normal costs and amortization of any Unfunded Accrued Liability (UAL). Failure to make such payments is likely to result in a deterioration of the funded status over time.

Additional Information and Disclosures

The information contained in this report is intended to be used by CRS for Plan funding purposes for the fiscal year ending on June 30, 2019, and its use for other purposes may not be appropriate. Calculations for purposes other than funding the Plan may produce significantly different results. These results supersede all December 31, 2017 actuarial valuation results for the Plan issued prior to the date of this report. CRS should rely only on the December 31, 2017 actuarial valuation results and ADC rates for the fiscal year ending on June 30, 2019 provided herein.



The results contained in this report were prepared by qualified actuaries according to generally accepted actuarial principles and practices, and in compliance with Actuarial Standards of Practice issued by the Actuarial Standards Board. ADC rates were developed based on the contribution allocation procedure described in GASB Statement Nos. 43 and 45, including any applicable guidance provided by CRS or its audit partners. In our opinion, if actuarially determined contributions are made by employers from year to year in the future at the levels required on the basis of successive actuarial valuations and actual experience substantially matches expectations, the current assets along with the anticipated future contributions will be sufficient to meet all benefit obligations of the Plan for the current active and retired members.

The measurement of Plan obligations used as the basis for much of the information presented in this report was performed as of December 31, 2017 (“the valuation date”) based on the following information provided by the CRS and/or the Plan’s Third Party Administrators for valuation purposes:

- Census data for active and retired members as of December 31, 2017;
- Current plan provisions, including changes since December 31, 2016;
- Pertinent financial information as of December 31, 2017; and
- Medical and prescription drug claims and contribution data described in the CRS Funding Rate Analysis for the 2018 Plan Year issued on September 8, 2017.

We did not audit the supplied information, but it was reviewed for reasonableness and consistency. In certain situations, the supplied information was adjusted to account for normal differences in collection dates and/or methods. As a result, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it is reliable for the purposes stated herein. The results and conclusions contained in this report depend on the integrity of this information, and if any of the supplied information or analyses change, our results and conclusions may be different and this report may need to be revised. Likewise, this report may need to be revised to reflect any significant event that affects the Plan subsequent to the valuation date.

Valuation results as of December 31, 2017 are based on the assumptions and methods adopted by the Board on March 1, 2018, which are summarized in various sections of this report. The 7.50% discount rate used for valuation purposes as of December 31, 2017 is prescribed under paragraph 29 of the CSA. For all other assumptions, we believe that those actuarial assumptions used to measure Plan obligations and assets as of December 31, 2017 are internally consistent and individually reasonable based on the actual or anticipated experience of the Plan. The actuarial cost method, the asset valuation method, and the amortization method used for funding purposes were selected by CRS during prior periods. We provided guidance concerning the use of these methods, and we believe that they are appropriate for funding purposes.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: retiree group benefits program experience differing from that anticipated by the assumptions; changes in assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan’s funded status); and changes in retiree group benefits program provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein. **This report does not consider all possible scenarios.**



June 7, 2018
Board of Trustees
Page 3

The funded status measurements included in this report are based on the assumptions and methods used to determine the Plan's obligations and asset values as of the valuation and/or measurement date. Funded status measurements for financial accounting purposes may not be appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. Likewise, funded status measurements for financial accounting purposes may not be appropriate for assessing the need for or the amount of future actuarially determined contributions. Funded status measurements would be also be different if the market value of assets was used in these calculations instead of an actuarial value of assets.

Cavanaugh Macdonald Consulting, LLC does not provide legal, investment, or accounting advice. Thus, the information contained in this email and the attachments is not intended to supersede or supplant the advice and interpretations of CRS or its legal, investing, or accounting partners.

The undersigned are familiar with the near-term and long-term aspects of other postemployment benefit plan valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained in this report. All sections of this report, including any appendices and attachments, are considered an integral part of the actuarial opinions.

We trust that this report will garner the approval of the Board and will furnish the desired information concerning the financial condition of CRS.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Jeffrey Gann'.

Jeffrey Gann, FSA, MAAA, EA
Senior Actuary

A handwritten signature in blue ink, appearing to read 'Edward J. Koebel'.

Edward Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, appearing to read 'Alisa Bennett'.

Alisa Bennett, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

JG/EK/AB:bw



TABLE OF CONTENTS

<u>Section</u>	<u>Item</u>	<u>Page No.</u>
I	Summary of Principal Results	1
II	Membership Data	4
III	Assets	6
IV	Comments on Valuation	7
V	Contributions Payable	10
VI	Accounting Information	11
VII	Experience	13
 <u>Schedule</u>		
A	Development of the Unfunded Actuarial Accrued Liability	14
B	Valuation Balance Sheet	15
C	Development of the Actuarial Value of Assets	16
D	Current Asset Information	17
E	Outline of Actuarial Assumptions and Methods	19
F	Actuarial Cost Method	27
G	Summary of Main System Provisions as Interpreted for Valuation Purposes	28
H	Tables of Membership Data	35
I	Analysis of Financial Experience	40





Section I – Summary of Principal Results

1. For convenience of reference, the principal results of the current and preceding valuations are summarized below.

Valuation Date	December 31, 2017		December 31, 2016	
Active members ¹ :				
Number ²		3,101		2,769
Annualized covered compensation	\$	172,156,202	\$	162,287,018
Annualized total compensation	\$	199,057,955	\$	175,122,601
Retired members and surviving spouses receiving retiree health benefits:		3,684		3,792
Number of spouses receiving retiree health benefits:		<u>1,419</u>		<u>1,461</u>
Total		5,103		5,253
Number of members and beneficiaries entitled to deferred benefits		26		23
Assets:				
Market Value	\$	504,394,000	\$	468,973,000
Actuarial Value	\$	497,232,733	\$	485,844,648
Unfunded actuarial accrued liability	\$	(1,044,588)	\$	(35,818,968)
Amortization Period		30 years		30 years
Funded Ratio:				
Market Value		101.7%		104.2%
Actuarial Value		100.2%		108.0%
City's Fiscal Year Ending		June 30, 2019		June 30, 2018
City actuarially determined contribution (ADC) rate:		Covered ³ Total ³		Covered ³ Total ³
Normal Cost Rate ⁴		2.63% 2.19%		2.45% 2.27%
Unfunded Accrued Liability Rate		<u>(0.05%)</u> <u>(0.04%)</u>		<u>(1.74%)</u> <u>(1.61%)</u>
Total Contribution Rate as % of Pay		2.58% 2.15%		0.71% 0.66%
City estimated ADC in dollars:				
Normal Cost	\$	4,528,000	\$	3,976,000
Unfunded Accrued Liability		<u>(86,000)</u>		<u>(2,824,000)</u>
Estimated Total Contribution	\$	4,442,000	\$	1,152,000

¹ Includes 108 members participating in the Deferred Retirement Option Plan (DROP) as of December 31, 2017.

² Includes 437 eligible part-time employees as of December 31, 2017. As of December 31, 2017, there were 469 full-time employees and 305 part-time employees assumed to be ineligible for retiree health benefits.

³ With the December 31, 2015 closure of the plan, covered compensation reflects the pay of retiree health benefits-eligible active employees. For 2017, covered compensation includes the compensation of current DROP participants and part-time employees and total compensation includes the compensation of current DROP participants and all active employees.

⁴ The normal cost rate includes estimated administrative expenses.





Section I – Summary of Principal Results

2. The major benefit and contribution provisions of the System, as reflected in the valuation, are summarized in Schedule G. There were no changes in plan provisions since the previous valuation as of December 31, 2016.
3. Schedule E of this report outlines the full set of actuarial assumptions and methods used in the valuation. The following changes were made to the methods and assumptions since the previous valuation:
 - The price inflation assumption was decreased from 3.00% to 2.75%.
 - Retirement, withdrawal, and disability rates were changed to more closely reflect recent experience.
 - Mortality rates for all members were changed to a generational approach using the RP-2014 mortality tables.
 - Merit salary scale was changed to more closely reflect recent experience.
 - The assumed initial per capita health care costs used to project the per capita health care costs have been updated to reflect CRS's recent experience.
 - As the contribution rates for those retirees participating in the Select Plan and the Model Plan are based upon retiree health care cost experience, retiree contribution rates were updated to reflect CRS's recent experience.
 - The assumed rates of health care inflation have been updated to reflect the anticipated future experience of the plan.
 - The assumed rates of health benefit plan participation have been updated to better reflect the anticipated experience of the plan.
4. Schedule C shows the development of the actuarial value of assets, and Schedule F provides a brief description of the actuarial cost method.
5. Comments on the valuation results as of December 31, 2017 are given in Section IV, comments on the experience and actuarial gains and losses during the valuation year are given in Section VII and further discussion of the contributions is set out in Section V.





Section I – Summary of Principal Results

6. As shown in the Summary of Principal Results, two funded status metrics are presented: one is the ratio of the actuarial value of assets to the accrued liability, and the other is the ratio based on market value of assets. The funded ratio is an indication of progress in funding the promised benefits. When the ratio is less than 100%, there is a need, in addition to the normal cost contributions, for contributions toward payment of the unfunded accrued liability. When the ratio is 100% or more, the amortized surplus may be used to reduce the normal cost contributions. The funded ratio does not have any relationship to measuring sufficiency if the plan had to settle its liabilities.





Section II – Membership Data

- The census data for all current members of the Plan was provided by CRS for valuation purposes as of December 31, 2017. As of the valuation date, 3,101 active full-time employees, part-time employees, and DROP participants—with annualized compensation totaling \$172,156,202—have either met or are expected to meet the Plan’s eligibility criteria and elect to receive retiree health benefits when they retire. We have included 437 eligible part-time employees (those hired before December 31, 2015) in Plan liabilities as of December 31, 2017. This change increased obligations by approximately \$ 1.96 million (0.40%). As of December 31, 2017, there were 469 full-time employees and 305 part-time employees assumed to be ineligible for retiree health benefits.
- The following table shows the number of retired members and spouses in receipt of retiree health benefits, and those members with deferred retiree health benefits as of December 31, 2017.

**THE NUMBER OF RETIRED MEMBERS AND BENEFICIARIES
AS OF DECEMBER 31, 2017**

Group	Number
Retired members and surviving spouses currently receiving retiree health benefits	3,684
Spouses currently receiving retiree health benefits	<u>1,419</u>
Total	5,103
Retired members and surviving spouses not currently receiving retiree health benefits but may elect coverage in the future	<u>244</u>
Total	5,347
Terminated vested members eligible for retiree health benefits	26
Terminated vested members not eligible for retiree health benefits	<u>185</u>
Total	5,558

Note: In addition, there are 7,556 inactive participants hired before December 31, 2015 who are former employees with an employee account balance in the pension plan, but are assumed not to be vested. No retiree health benefit liability is assumed for these individuals.





Section II – Membership Data

3. Table 1 in Schedule H shows the distribution by age and years of membership service of the number of active members included in the valuation, while Table 2 shows the number of retired members, beneficiaries, and spouses included in the valuation, distributed by age. Table 3 provides a distribution of members, beneficiaries, and spouses included in the valuation, by health care plan.





Section III – Assets

1. As of December 31, 2017, the market value of assets available for the purpose of providing retiree health benefits is \$504,394,000, as reported by CRS. The estimated dollar-weighted rate of return for the plan year ending on December 31, 2017 is 14.51%. Schedule D shows a reconciliation of the market value of assets from December 31, 2016 to December 31, 2017.
2. The actuarial value of assets as of December 31, 2017 is \$497,232,733 based on the “five-year smoothed value” asset valuation method. The estimated dollar weighted rate of return on the actuarial asset values for the plan year ending on December 31, 2017 is 8.88%, which can be compared to the 7.50% expected long-term rate of return for the same period. Schedule C shows the development of the actuarial value of assets as of December 31, 2017.





Section IV – Comments on Valuation

1. Schedule B of this report contains the valuation balance sheet that shows the present and prospective assets and liabilities of CRS as of December 31, 2017. The valuation was prepared in accordance with the actuarial assumptions set forth in Schedule E and the actuarial cost method that is described in Schedule F.
2. The valuation balance sheet shows that CRS has total prospective liabilities of \$531,646,659, of which \$348,235,306 is for the prospective retiree health benefits payable on account of present retired members, beneficiaries of deceased members, and terminated members entitled to deferred retiree health benefits, and \$183,411,353 is for the prospective retiree health benefits payable on account of present active members. Against these liabilities, CRS has a total present actuarial value of assets of \$497,232,733 as of December 31, 2017. The difference of \$34,413,926 between the total liabilities and the total present assets represents the present value of future contributions.
3. The actuarially determined contributions of CRS consist of normal contributions and accrued liability contributions. The valuation indicates that normal contributions at the rate of 2.25% of payroll are required under the entry age method. Estimated budgeted administrative expenses are included in the normal cost rate, and for the fiscal year ending June 30, 2019, are estimated to be 0.38% of payroll. As active employees do not contribute to retiree health benefits, the full amount of 2.63% is payable by the City.
4. Prospective normal contributions at the rate of 2.63% have a present value of \$35,458,514 net of administrative expenses. The difference between \$35,458,514 (the present value of future normal costs) and \$34,413,926 (the present value of the total future contributions to be made) is expected to be a surplus of \$1,044,588 as of December 31, 2017. The development of the unfunded accrued liability is shown in Schedule A.





Section IV – Comments on Valuation

5. As can be seen from Schedule I of our report, the Plan had a gain for the year. This gain has four main sources: (1) asset performance was better than expected; (2) fewer members enrolled themselves or their dependents in retiree health benefit plans than expected; (3) some members chose less costly retiree health plan options; and (4) mortality experience gains from current retiree health benefit recipients and/or their dependents.
6. The valuation's discount rate assumption of 7.50% reflects CRS's intent, in the long-term, to fully-fund retiree health benefits. If CRS is unable to maintain the fully-funded status of retiree health benefits due to a reduction in asset levels resulting from investment returns below the current target rate of return, higher than expected benefit payments, and/or the inability to make future contributions, the valuation of retiree health benefits liabilities may require the use of a lower discount rate.
7. The impact of the Affordable Care Act (ACA) was addressed in this valuation. Review of the information currently available did not identify any specific provisions of the ACA that are anticipated to significantly impact results. While the impact of certain provisions such as the future implementation of the excise tax on high-value health insurance plans (if applicable) and participation changes due to the individual mandate should be recognized in the determination of liabilities, overall future plan costs and the resulting liabilities are driven by amounts employers and retirees can afford (i.e., trend). The trend assumption forecasts the anticipated increase to initial per capita costs, taking into account health care cost inflation, increases in benefit utilization, plan changes, and technological advances. Given the uncertainty regarding the ACA's implementation (e.g., the impact of excise tax on high-value health insurance plans, changes in participation resulting from the implementation of state-based health insurance exchanges), continued monitoring of the ACA's impact on the Plan's liability will be required.





Section IV – Comments on Valuation

8. The information provided in this report is for the purposes of funding retiree health benefits. Nothing in this report is intended to indicate termination sufficiency.
9. Calculations in this report, including the funded ratio, are based on an actuarial value of assets that uses a smoothing method (see Schedule E for a description). If the market value of assets was used instead of the actuarial value of assets, different results would be obtained.





Section V – Contributions Payable

1. The contributions consist of a normal contribution and an accrued liability contribution as determined by an actuarial valuation.
2. The normal contribution rate is calculated as the level percentage of payroll which, if applied for the average new member during the entire period of his anticipated covered service, would be required to meet the cost of all retiree health benefits payable on his or her behalf. On the basis of the valuation, the normal contribution rate was determined to be 2.63% for the fiscal year ending June 30, 2019, which includes a load of 0.38% for expected administrative expenses during the period. As active employees do not contribute to retiree health benefits, the full amount of 2.63% is payable by the City.
3. A reduction to the normal contribution of 0.05% of payroll will deplete the surplus within an open 30-year period.
4. The total City Actuarially Determined Contribution (ADC) rate required for the City's fiscal year ending June 30, 2019 is, therefore, 2.58% of payroll. It is our recommendation that the employer contributions to CRS be set at the ADC rate of 2.58% of payroll.
5. The following table summarizes the employer contributions that were determined by the December 31, 2017 valuation and are recommended for use during the fiscal year ending on June 30, 2019.

**ACTUARIALLY DETERMINED CONTRIBUTION (ADC)
FOR CITY'S FISCAL YEAR ENDING JUNE 30, 2019**

Contribution	Percentage of Active Members' Compensation	Dollar Amount
Normal	2.63%	\$ 4,528,000
Accrued Liability	<u>(0.05)</u>	<u>(86,000)</u>
Total	2.58%	\$ 4,442,000





Section VI – Accounting Information

1. Governmental Accounting Standards Board (GASB) has issued Statement Nos. 74 and 75 which replaced Statement Nos. 43 and No. 45 for fiscal years beginning after June 15, 2016. The information required under GASB Statement Nos. 74 and 75 (GASB 74 and 75) will be issued in separate reports. The following exhibits are provided for informational purposes only.

NUMBER OF ACTIVE AND RETIRED PARTICIPANTS AS OF DECEMBER 31, 2017

Membership Group	Total
Retired members and surviving spouses currently receiving retiree health benefits	3,684
Spouses currently receiving retiree health benefits	1,419
Retired members and surviving spouses not currently receiving retiree health benefits but who may elect coverage in the future	244
Terminated vested members eligible for retiree health benefits	26
Active Participants	
Full-Time	2,556
DROP	108
Part-Time	<u>437</u>
Total active participants	<u>3,101</u>
Total	8,474





Section VI – Accounting Information

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS Dollar Amounts in Thousands

Actuarial Valuation Date	Actuarial Value of Assets (a)	Entry Age Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
12/31/2012	\$634,173	\$641,876	\$ 7,703	98.8%	\$167,148	4.6%
12/31/2013	674,709	618,508	(56,201)	109.1%	163,477	(34.4%)
12/31/2014	706,959	590,902	(116,057)	119.65	164,575	(70.5%)
12/31/2015	474,746	484,833	10,087	97.9%	174,963	5.8%
12/31/2016	485,845	450,026	(35,819)	108.0%	168,785	(21.2%)
12/31/2017	497,233	496,188	(1,045)	100.2%	172,156*	(0.6%)

* This amount excludes compensation for full-time and part-time employees hired after December 31, 2015.

3. Additional information as of December 31, 2017 follows:

Valuation date	12/31/2017
Actuarial cost method	Entry age normal (level % of pay)
Amortization method	Level dollar
Remaining amortization period	Open 30 years
Asset valuation method	Five-year smoothed asset value
Actuarial assumptions:	
Investment rate of return (includes inflation)	7.50%
Projected salary increases (includes inflation)	3.75% - 7.50%
Health care trend rate (includes inflation)	7.75% / 5.50% initial (varies by payment age)
	4.75% ultimate
Inflation	2.75%





Section VII – Experience

Actual experience will never (except by coincidence) follow exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. The experience Gain / (Loss) for the year ended December 31, 2017 is developed in the table below.

Plan Experience Gain / (Loss) as of December 31, 2017		\$ in Thousands
(1)	Unfunded Actuarial Accrued Liability (UAAL) as of December 31, 2016	\$ (35,819)
(2)	Normal cost from December 31, 2016 valuation	3,976
(3)	Actual employer contributions	0
(4)	Interest accrual: $[(1) \times 0.075] + \{[(2) - (3)] \times 0.075 \times 0.50\}$	<u>(2,537)</u>
(5)	Expected UAAL before changes: $[(1) + (2) - (3) + (4)]$	\$ (34,380)
(6)	Change due to plan amendments	0
(7)	Change due to actuarial assumptions or methods	<u>48,461</u>
(8)	Expected UAAL after changes: $[(5) + (6) + (7)]$	\$ 14,081
(9)	Actual UAAL as of December 31, 2017	\$ (1,045)
(10)	Experience Gain / (Loss): $[(8) - (9)]$	\$ 15,126
(11)	Experience Gain / (Loss) as a percentage of the December 31, 2016 Actuarial Accrued Liability (\$450,026)	3.36%

HISTORY OF EXPERIENCE GAINS / (LOSSES) AS A PERCENTAGE OF THE BEGINNING OF YEAR ACTUARIAL ACCRUED LIABILITY

Valuation Date	Experience Gain / (Loss) Percentage
December 31, 2012	(8.7)%
December 31, 2013	5.4%
December 31, 2014	5.5%
December 31, 2015	0.5%
December 31, 2016	2.6%
December 31, 2017	3.4%





Schedule A – Development of the Unfunded Accrued Liability

	December 31, 2017	December 31, 2016
(1) Present value of prospective benefits:		
(a) Present active members	\$ 183,411,353	\$ 157,558,641
(b) Present retired members, beneficiaries and former members entitled to deferred vested retiree health benefits	<u>348,235,306</u>	<u>322,992,259</u>
(c) Total	\$ 531,646,659	\$ 480,550,900
(2) Present value of future normal contributions	<u>35,458,514</u>	<u>30,525,220</u>
(3) Actuarial accrued liability: 1(c) – (2)	\$ 496,188,145	\$ 450,025,680
(4) Actuarial value of assets	<u>497,232,733</u>	<u>485,844,648</u>
(5) Unfunded actuarial accrued liability (UAAL): (3) – (4)	\$ (1,044,588)	\$ (35,818,968)
(6) Actuarially Determined Contribution (ADC) Rate		
(a) Normal Cost ¹	2.63%	2.45%
(b) UAAL	<u>(0.05)%</u>	<u>(1.74)%</u>
(c) Total as a % of Payroll	2.58%	0.71%
(7) Estimated ADC in Dollars		
(a) Normal Cost	\$ 4,528,000	\$ 3,976,000
(b) UAAL	<u>(86,000)</u>	<u>(2,824,000)</u>
(c) Estimated Total	\$ 4,442,000	\$ 1,152,000

¹ The normal cost rate includes estimated administrative expenses.





Schedule B – Valuation Balance Sheet

The following table provides a reconciliation of the Plan's present and prospective assets and liabilities as of December 31, 2017:

<u>ACTUARIAL LIABILITIES</u>	
Present value of prospective retiree health benefits payable on account of present retired members, beneficiaries of deceased members, and terminated members entitled to deferred benefits	\$ 348,235,306
Present value of prospective retiree health benefits payable on account of present active members	<u>183,411,353</u>
Total liabilities	<u>\$ 531,646,659</u>
<u>PRESENT AND PROSPECTIVE ASSETS</u>	
Actuarial value of assets	\$ 497,232,733
Present value of future contributions	
City normal contributions	\$ 35,458,514
Unfunded accrued liability contributions	<u>(1,044,588)</u>
Total prospective contributions	<u>\$ 34,413,926</u>
Total assets	<u>\$ 531,646,659</u>





Schedule C – Development of the Actuarial Value of Assets

(1)	Actuarial Value of Assets as of December 31, 2016	\$ 485,844,648
(2)	Market Value of Assets as of December 31, 2017	\$ 504,394,000
(3)	Market Value of Assets as of December 31, 2016	\$ 468,973,000
(4)	Net Cash Flow During Plan Year	
	(a) Contributions	\$ 0
	(b) Net Benefit Payments and Net Transfers	(30,021,000)
	(c) Administrative Expenses	(396,000)
	(d) Investment Expenses	<u>(2,221,000)</u>
	(e) Net Cash Flow: (a) + (b) + (c) + (d)	\$ (32,638,000)
(5)	Investment Income	
	(a) Market Total: (2) – (3) - (4)(e)	\$ 68,059,000
	(b) Assumed Rate	7.50%
	(c) Amount for Immediate Recognition	
	[(3) x (5)(b)] + [(4)(a) + (4)(b) + 4(c)] x (5)(b) x 0.5 - (4)(d)	\$ 36,253,338
	(d) Amount for Phased-In Recognition: (5)(a) – (5)(c)	\$ 31,805,662
(6)	Recognized Amounts for Plan Year	
	(a) Current Year: 0.20 x (5)(d)	\$ 6,361,132
	(b) First Prior Year	1,539,870
	(c) Second Prior Year	(10,935,913)
	(d) Third Prior Year	(1,031,047)
	(e) Fourth Prior Year	<u>11,838,705</u>
	(f) Total Recognized Investment Gain/(Loss)	\$ 7,772,747
(7)	Actuarial Value of Assets as of December 31, 2017	
	(1) + (4)(e) + (5)(c) + (6)(f)	\$ 497,232,733
	80% of Market Value EOY	403,515,200
	120% of Market Value EOY	605,272,800
(8)	Final Actuarial Value of Assets as of December 31, 2017	\$ 497,232,733
(9)	Rate of Return on Actuarial Value ¹	8.88%

¹ Dollar-weighted rate of return assuming that all cash flows occur in the middle of the year.





Schedule D – Asset Information

<i>Receipts</i>		
(1) Contributions		
• City Contributions	\$ 0	
• Medicare Reimbursements	<u>0</u>	
Total Contributions		\$ 0
(2) Investment Income		
• Interest and Dividends	\$ 9,083,000	
• Net Appreciation (Depreciation) in Fair Value of Investments	58,926,000	
• Other Investment Earnings	50,000	
• Investment Expenses	<u>(2,221,000)</u>	
Total Investment Income		<u>\$ 65,838,000</u>
(3) Total Receipts		\$ 65,838,000
<i>Disbursements</i>		
(4) Net Benefits Paid	\$ (30,021,000)	
(5) Administrative Expenses	<u>\$ (396,000)</u>	
(6) Total Disbursements		\$ (30,417,000)
(7) Net Increase/(Decrease): [(3) + (6)]		\$ 35,421,000
<i>Reconciliation of Asset Balances</i>		
(8) Market Value at December 31, 2016		\$468,973,000
(9) Excess of Receipts Over Disbursements		<u>35,421,000</u>
(10) Market Value at December 31, 2017		\$504,394,000
(11) Estimated Rate of Return on Market Value of Assets ¹		14.51%

¹ Dollar-weighted rate of return assuming that all cash flows occur in the middle of the year.





Schedule D – Asset Information

HISTORICAL ASSET INFORMATION (\$ in Thousands)

Valuation Date	Actuarial Value of Assets		Market Value of Assets	
	Amount	Dollar-Weighted Rate of Return	Amount	Dollar-Weighted Rate of Return
12/31/2009	\$746,029	0.40%	\$621,691	19.13%
12/31/2010	726,412	2.43	657,319	13.10
12/31/2011	668,392	(1.65)	616,464	0.87
12/31/2012	634,173	0.15	652,864	11.95
12/31/2013	674,709	12.02	726,098	16.81
12/31/2014	706,959	10.01	737,722	6.38
12/31/2015	474,746	7.39	456,918	(0.11)
12/31/2016	485,845	8.67	468,973	9.24
12/31/2017	497,233	8.88	504,394	14.51





Schedule E – Outline of Actuarial Assumptions and Methods

The following actuarial assumptions and methods were adopted by the Board on March 1, 2018.

VALUATION DATE: December 31, 2017

DISCOUNT RATE: 7.50% per year

EXPECTED RATE OF RETURN ON ASSETS: 7.50% per year, net of investment expenses

EXPECTED LONG-TERM RATES OF INFLATION:

CPI: 2.75% per year

MEDICAL CPI: 3.25% per year

EXPENSES: Estimated budgeted administrative expenses equal to 0.38% of payroll were included in the normal cost rate.

LONG-TERM HEALTH CARE COST TREND RATES:

Annual per capita health care claims costs are expected to increase in future years as a result of medical inflation, utilization, leverage in the plan design, and improvements in technology adjusted for any implicit and/or explicit cost containment features. Initial health care cost trend rates were selected based on an analysis of national average health trend surveys specific to similarly structured plans for both Medicare ineligible and Medicare eligible participants. The assumed rates of increases in expected retiree health care claims costs and contributions vary by year, retiree health plan, and payment age, as shown in the table below:

Calendar Year	All Plans Payment Age Under 65	Non-Model Plans Payment Age Over 64	Model Plan Payment Age Over 64
2018	7.75%	5.50%	5.80%
2019	7.50%	5.40%	5.70%
2020	7.25%	5.30%	5.50%
2021	7.00%	5.10%	5.40%
2022	6.75%	5.00%	5.20%
2023	6.50%	4.90%	5.10%
2024	6.15%	4.75%	4.90%
2025	5.80%	4.75%	4.75%
2026	5.45%	4.75%	4.75%
2027	5.10%	4.75%	4.75%
2028+	4.75%	4.75%	4.75%





Schedule E – Outline of Actuarial Assumptions and Methods

RETIREE HEALTH CARE PLAN INITIAL PER CAPITA COSTS:

Assumed adult per capita health care costs were based on past experience and trended forward to the valuation period. Costs were adjusted to account for any changes in administration, plan changes, and large claims, if appropriate. As some participants elect to cover dependents, the assumed adult costs include the additional costs of coverage for non-spouse dependents.

The following chart details the initial adult per capita health care cost assumptions. These amounts include medical, drug, and administrative costs and represent the full cost of providing benefits. The average medical, drug, and administrative costs shown are normalized to age 65 and then age adjusted in calculating liabilities. Additionally, health care costs for all prospective health care plan participants and existing retirees not yet age 65 who were hired prior to April 1, 1986 are adjusted to account for their potential ineligibility for premium-free Medicare Part A.

Expected Annual Per Capita Age 65 Medical, Drug, and Administrative Costs			
Payment Age Over 64			
Health Plan	Payment Age Under 65	Not Enrolled in Medicare Part A	Enrolled in Medicare Part A
Secure Plan	\$22,455	\$7,527	\$3,987
Select Plan	\$17,116	\$6,894	\$3,418
Model Plan	\$17,077	\$6,534	\$3,332

Future experience may differ significantly from the cost estimates presented in this report due to unforeseen and random events. As such, the valuation's results should be viewed as having a likely range of variability.

AGE RELATED MORBIDITY: Expected annual age 65 per capita retiree health care claims costs are adjusted to reflect anticipated age-related cost changes. The assumed annual percentage increases in expected annual per capita retiree health care costs/net incurred claims that were used to adjust amounts from one age to the next are provided in the following table for both retirees and their dependents:

Payment Age	Annual Increase
Under 30	0.0%
30 – 34	1.0
35 – 39	1.5
40 – 44	2.0
45 – 49	2.6
50 – 54	3.3
55 – 59	3.6
60 – 64	4.2
65 – 69	3.0
70 – 74	2.5
75 – 79	2.0
80 – 84	1.0
85 – 89	0.5
Over 89	0.0





Schedule E – Outline of Actuarial Assumptions and Methods

RETIREE HEALTH CARE PLAN CONTRIBUTIONS: Assumed adult per capita health care contribution rates were developed for those participants in the 2017 Select Plan who are required to contribute a portion of retiree health benefit costs as defined in Schedule C. Contributions were determined to fully-fund retiree health benefit costs in 2018 based upon Medicare eligibility status. Rates are based on retiree cost experience, enrollment, and trended based on the assumptions. The following chart details the full (100%) adult per capita contribution assumptions. These amounts include medical, drug, and third party administrative costs.

Health Plan	Retiree		Spouse	
	Payment Age Under 65	Payment Age Over 64	Payment Age Under 65	Payment Age Over 64
Secure Plan	\$0	\$0	\$0	\$0
Select Plan	\$14,488	\$4,702	\$14,238	\$4,452
Model Plan	\$13,398	\$3,582	\$13,148	\$3,331

As members hired after December 31, 2015 are ineligible to receive retiree health benefits, the contributions assumed for years beyond 2017 are based upon the projected retiree health care costs associated with each projection year's closed group of participants, reflecting the impact of aging and health care inflation.

MEDICARE COVERAGE AND ELIGIBILITY: Retiree health benefit participants age 65 and older who are eligible for premium-free Medicare Part A benefits are assumed to be enrolled in Medicare Part A. For those retiree health benefit participants who are not eligible for premium-free Medicare Part A coverage, CRS is assumed to remain the primary payer. For a portion of the Medicare eligible group, the premium-free Medicare Part A eligibility status is provided by CRS. As the premium-free Medicare Part A eligibility status is determined from a wide range of sources with varying and, at times, limited content, the premium-free Medicare Part A eligibility status data is incomplete. Adjustments have been made to account for this incompleteness. As the true status of those who are, or will be eligible for premium-free Medicare Part A is uncertain, actual results may be materially different. For all unidentified current retirees, hired prior to April 1, 1986, and not assumed eligible for premium-free Medicare Part A coverage through their spouse, as well as those active employees hired prior to April 1, 1986, 15% are assumed to not qualify for premium-free Medicare Part A coverage. The assumption of 15% is based upon estimates from the current retiree population. 100% of deferred vested members receiving health care benefits are assumed to obtain the 40 or more quarters of Medicare-covered employment required for premium-free Medicare Part A coverage as a result of their subsequent employment.

All retiree health benefit participants age 65 and older are assumed to be enrolled in Medicare Part B.





Schedule E – Outline of Actuarial Assumptions and Methods

HEALTH BENEFIT PLAN PARTICIPATION¹: Actual census data and current plan elections provided by CRS were used for those currently receiving retiree health benefits. Group 1 members who retired prior to September 1, 2007 and currently qualify for the Secure Plan, are assumed to re-qualify in all future years. All current participants not qualifying for the Secure Plan are covered either by the Select Plan or the Model Plan. Current participants are assumed to maintain their current retiree health benefits coverage until they are no longer eligible.

The active members of Group C with at least 15 years of creditable service shall be entitled to retiree health benefits under the Select Plan as Group 1 members. All other eligible future retirees electing retiree health benefits are assumed to be covered by the Model Plan. 95% of eligible future retirees in Group 1 are assumed to elect retiree health benefits. Eligible future retirees in Group 2 are required to pay the portion of their cost as determined by the point system, so retiree health benefit election rates are assumed to reduce as the level of cost sharing increases. The point system is based upon the sum of the member's full years of service and the member's age at separation from service. The assumed contribution rates and rates of participation for Group 1 and Group 2 members are as follows:

Group	Assumed Rate of Participation (Pre-65 Retirement)	Assumed Rate of Participation (Post-64 Retirement)	Retiree Contribution As A Percentage of Cost	
			Select Plan	Model Plan
Group 1	95%	95%	5%	10%
Group 2 with 90+ Points	90% grading to 45% over 20 years	45% for all years	5%	10%
Group 2 with 80 – 89 Points	90% grading to 45% over 20 years	45% for all years	25%	25%
Group 2 with 70 – 79 Points	40% grading to 0% over 20 years	0%	50%	50%
Group 2 with 60 – 69 Points	40% grading to 0% over 20 years	0%	75%	75%

For those eligible future retirees of Group 2 with less than 60 points, CRS will pay 25% of the full premium for retiree coverage only (spouse or dependent coverage are not available). It is assumed 0% of these eligible future retirees will elect retiree health benefits.

It is assumed that 100% of eligible future disabled retirees will elect retiree health benefits.

SPOUSE COVERAGE IN RETIREE HEALTH BENEFIT PLANS¹: Actual census data, payment form elections, and current health care plan elections for spouses of current retirees were used. For spouses of eligible future retirees, a 100% spouse coverage election rate is assumed for those members choosing a joint & survivor payment form, and a 15% spouse coverage election rate is assumed for those members selecting a single life annuity payment form. Under a joint & survivor payment form, retiree health benefits are available until the death of the last annuitant.

¹ Long-term health care participation rates for Group 2 members and spouse coverage election rates are uncertain and future experience may differ significantly from the assumptions that were used to measure Plan obligations as of December 31, 2017. As such, these assumptions will need to be reviewed as experience evolves, and the results provided in this report should be viewed as having a likely range of variability.





Schedule E – Outline of Actuarial Assumptions and Methods

PERCENT ELECTING MEDICAL EXPENSE REIMBURSEMENT PROGRAM (MERP): Based upon current participation in the MERP, 0% of current and future retiree health benefits participants are assumed to elect the MERP. As credible experience for MERP participation is not yet available, the assumed rate of participation is an estimate and actual results may be materially different. As such, this assumption will need to be reviewed as credible experience evolves.

SALARY INCREASES: Salary increases are assumed to vary by service. Representative rates are as follows:

Service	Annual Increase
0	7.50%
5	5.00
10	4.50
15	4.00
21+	3.75

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed annual rates of separation from active service are as follows:

Age	Annual Rate of Withdrawal			
	Less than One Year of Service	Between One and Three Years of Service	Between Three and Five Years of Service	Five or More Years of Service
20	22.00%	10.00%	8.00%	4.00%
25	22.00	10.00	8.00	4.00
30	22.00	10.00	8.00	4.00
35	22.00	10.00	4.00	4.00
40	22.00	10.00	4.00	2.75
45	22.00	10.00	4.00	1.25
50	22.00	10.00	4.00	1.25
55	22.00	10.00	4.00	1.25
60	22.00	10.00	4.00	1.25
65	22.00	10.00	4.00	1.25
70	22.00	10.00	4.00	1.25





Schedule E – Outline of Actuarial Assumptions and Methods

Age	Annual Rate of Disability*
20	0.005%
25	0.010
30	0.015
35	0.025
40	0.045
45	0.075
50	0.135
55	0.210
60	0.250
65	0.250

* Rates are 0% when member is eligible for normal retirement

Annual Rate of Retirement					
Groups C, E, and F*					
Age	5 Years of Service	6–24 Years of Service	25–29 Years of Service	30 Years of Service	31+ Years of Service
50				55.0	30.0
55			6.0%	55.0	30.0
56			8.0	55.0	30.0
57			10.0	55.0	30.0
58			10.0	55.0	30.0
59			10.0	55.0	30.0
60	25.0%	25.0%	25.0	55.0	25.0
61	25.0	18.0	18.0	55.0	25.0
62	25.0	18.0	18.0	55.0	25.0
63	25.0	18.0	18.0	55.0	25.0
64	25.0	18.0	18.0	55.0	25.0
65	25.0	18.0	18.0	55.0	25.0
70	100.0	100.0	100.0	100.0	100.0

* For purposes of valuing CSA Employee members eligible for DROP benefits, an additional 10% is added to rates for 30 years of service and an additional 5% is added to rates for 31+ years of service.





Schedule E – Outline of Actuarial Assumptions and Methods

Age	Annual Rate of Retirement				
	Group G				
	5 Years of Service	6–14 Years of Service	15-29 Years of Service	30 Years of Service	31+ Years of Service
57			6.0%	6.0%	6.0%
58			6.0	6.0	6.0
59			8.0	8.0	8.0
60			8.0	8.0	8.0
61			10.0	10.0	10.0
62			10.0	25.0	25.0
63			10.0	25.0	18.0
64			10.0	25.0	18.0
65			10.0	25.0	18.0
66			10.0	25.0	18.0
67	25.0%	25.0%	25.0	25.0	18.0
68	25.0	18.0	18.0	18.0	18.0
69	25.0	18.0	18.0	18.0	18.0
70	100.0	100.0	100.0	100.0	100.0

DROP PARTICIPATION: 60% of eligible CSA Employee members eligible for DROP benefits are assumed to decline participation and 40% are assumed to elect participation. Those electing to participate are assumed to remain in the DROP for 3 years.

PRERETIREMENT MORTALITY AND MORTALITY IMPROVEMENT: RP-2014 healthy employee dataset mortality with fully generational projected mortality improvements using MP-2017. RP-2014 healthy employee dataset mortality rates for males and females have been set forward 2 years.

POSTRETIREMENT MORTALITY AND MORTALITY IMPROVEMENT: For healthy lives, RP-2014 total dataset mortality with fully generational projected mortality improvements using MP-2017. RP-2014 total dataset mortality rates for males and females have been set forward 2 years. For disabled lives, RP-2014 disabled retiree mortality with fully generational projected mortality improvements using MP-2017.

WITHDRAWAL ASSUMPTION: It is assumed that 60% of vested members who terminate elect to leave their contributions in the plan in order to be eligible for a benefit at their normal retirement date while the remaining 40% elect to withdraw their contributions.

DECREMENT TIMING AND ADJUSTMENT: Decrements are assumed to occur at the middle of the year, except that 100% retirement (see above) is assumed to occur at the beginning of the year. Decrement rates (or “probabilities”) are assumed to be uniformly distributed throughout the year, and reflect multiple decrement effects.





Schedule E – Outline of Actuarial Assumptions and Methods

MARITAL AND SPOUSE ASSUMPTIONS:

For participants who are not receiving benefits, 100% of participants are assumed to be married to a spouse of the opposite gender. Husbands are assumed to be three years older than their wives.

For participants who are receiving benefits, actual spouse age is used where available. If relevant spouse information is not available, husbands are assumed to be three years older than their wives.

PART-TIME EMPLOYEES: On July 1, 1991, the plan was amended to include part-time employees. Part-time employees hired on or before December 31, 2015 have been included in the valuation.

ASSET VALUATION METHOD:

The actuarial value of assets for this purpose is determined using the “five-year smoothed value” asset valuation method, which attempts to “flatten” the peaks and valleys inherent in market values of assets. Under this method, investment gains and losses are recognized in equal portions over a five-year period. Investment gains and losses are determined by comparing the actual return on market value for a given period to the anticipated earnings over the same period if the market value of assets at the beginning of the period, contributions, benefit payments net of participant contributions, and administrative expenses during the period earned the expected rate of return for the portion of the period that each was expected to be including in, or excluded from, plan assets. The expected rate of return for this purpose is equal to the expected long-term rate of return assumption selected at the beginning of the experience period (in this case, 7.50% as of January 1, 2017). The resulting actuarial value of assets cannot be less than 80% or more than 120% of the market value of assets. Please see Schedule C for the development of the Actuarial Value of Assets as of the valuation date.

ACTUARIAL COST METHOD: Entry age normal (level percentage of pay) actuarial cost method. See Schedule F for a brief description of this method.

OTHER ASSUMPTIONS AND METHODS:

Unless otherwise stated above, all other actuarial assumptions and methods used for the funding purposes are the same as those described in the Plan’s December 31, 2016 actuarial valuation report.

Please see the December 31, 2016 actuarial valuation report for additional information about the data, assumptions, methods, and plan provisions used to prepare results as of the December 31, 2016 valuation date. Likewise, additional information concerning historical results can be found in the relevant actuarial valuation report for each valuation date.





Schedule F – Actuarial Cost Method

ACTUARIAL COST METHOD

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 7.50%), of each member's expected retiree health benefits at retirement or death is determined, based on age, service and sex. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a retiree health benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. The present value of the expected retiree health benefits payable on account of the active members is added to the present value of the expected future payments to retired members and beneficiaries to obtain the present value of all expected retiree health benefits payable from CRS on account of the present group of members and beneficiaries.
2. The employer contributions required to support the retiree health benefits of CRS are determined following a level funding approach, and consist of a normal contribution and an accrued liability contribution.
3. The normal contribution is determined using the entry age normal (level percentage of pay) actuarial cost method. Under this method, a calculation is made to determine the level percentage of payroll which, if applied for the average new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded accrued liability is determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets held, from the present value of expected retiree health benefits to be paid from CRS.





Schedule G – Summary of Main System Provisions

SUMMARY OF MAIN SYSTEM PROVISIONS AS INTERPRETED FOR VALUATION PURPOSES

Pension Benefit Eligibility

- All active employees of the City except for the following:
- Members of the Police and Fireman’s Disability and Pension Fund of Ohio.
 - Elected City officials.
 - Employees for whom the City contributes to PERS.
 - Members of the faculties, teaching staffs, research staffs, and administrative staff of the University of Cincinnati appointed to positions covered by the Teachers Insurance and Annuity Association Social Security Plan.
 - Persons becoming employees after June 1, 1961, who are employed in any of the following employment classifications: bricklayer, carpenter, carpenter foreman, cement finisher, electrician, electrician foreman, painter, painter foreman, plasterer, plumber, sign painter, steamfitter and pipefitter, tinsmith, or composition roofer.
 - Persons hired as police recruits who are not currently enrolled as a member of the System prior to their date of hire.
 - Current contributing members of the School Employees Retirement System (SERS) or the State Teachers Retirement System (STRS) who are hired by the City on a seasonal, temporary, or part-time basis.

Members of the System are divided into the following groups:

Group	Criteria
A, B	Any member who has retired prior to 7/1/2011.
C	Any member who, as of June 30, 2011, was an active or deferred vested member and had either: <ul style="list-style-type: none"> a) Completed at least 30 years of service, or b) Reached age 60 and completed at least 5 years of service.





Schedule G – Summary of Main System Provisions

Pension Benefit Eligibility (continued)

Group	Criteria
D	<p>Any active member who, between July 1, 2011 and December 31, 2013:</p> <ol style="list-style-type: none"> 1) Either <ol style="list-style-type: none"> a) Completed at least 30 years of service, or b) Reached age 60 and completed at least 5 years of service; and 2) Retired prior to January 1, 2014.
E	<p>Any active member who:</p> <ol style="list-style-type: none"> 1) Between July 1, 2011 and December 31, 2013 either: <ol style="list-style-type: none"> a) Completed at least 30 years of service, or b) Reached age 60 and completed at least 5 years of service; and 2) Retires on or after January 1, 2014.
F	<p>Any active member whose most recent membership enrollment date was prior to January 1, 2010 and who is not in groups A through E.</p> <p>Any deferred vested member whose most recent membership enrollment date was prior to January 1, 2010, is not in groups A through E, and has at least five years of service prior to the date they separate from employment.</p>
G	<p>Any member whose most recent membership enrollment date is on or after January 1, 2010, or</p> <p>Any member rehired on or after January 1, 2010, who has fewer than 5 years of service as of June 30, 2011, or</p> <p>Any retiree of the System who is receiving a service retirement allowance and is re-employed on or after April 1, 2013.</p>





Schedule G – Summary of Main System Provisions

Pension Benefit Eligibility (continued)

Members in the System are further classified as follows:

Class	Criteria
CSA Retiree (CSA participants corresponding to Retirees Class)	Group A and B members and their designated optionees.
CSA Employee (CSA participants corresponding to Current Employees Class)	Group C, D, E, and F members (and their designated optionees) that were vested and employed on 7/1/2011.
CMC Employee (Non-CSA participants.)	Group E and F members (and their designated optionees) that were either vested or employed on 7/1/2011 and no break in employment service since 1/1/2010 and prior to becoming vested.
Non-CSA	Group G members and their designated optionees.

Years of Service: Years or fractional years of full-time service rendered to the plan sponsor.

Normal Retirement

Groups A, B, C, D, E, and F:

Age 60 with 5 years of service or 30 years of service.

Group G:

Age 67 with 5 years of service or age 62 with 30 years of service.





Schedule G – Summary of Main System Provisions

Pension Benefit Eligibility (continued)

Early Retirement

Groups A, B, C, D, E, and F:
Age 55 with 25 years of service.

Group G:
Age 57 with 15 years of service.

Deferred Retirement Option Plan (DROP): Current Employees Class members with at least 30 years of service may participate in the DROP.

Disability Retirement Eligibility: 5 years of service.

Deferred Vested Retirement Eligibility: 5 years of service.

Retiree Health Benefits Eligibility

Per Ordinance 336-2016 adopted by the City Council on October 26, 2016, employees hired after December 31, 2015 are not eligible to receive retiree health benefits.

Group 1: Those members of Group C or those members hired before January 9, 1997. For those members of Group C or those members who retire under the System prior to January 1, 2016 (including their survivors receiving pension benefits), a minimum of 15 years of service is required. For those members who retire under the System after December 31, 2016 (including their survivors receiving pension benefits), a minimum attained age of 60 with 20 years of service or 30 years of service regardless of age is required.

Group 2: Those participants hired on or after January 9, 1997. For those members who retire under the System prior to January 1, 2016 (including their survivors receiving pension benefits), a minimum of 15 years of service is required. For those members who retire under the System after December 31, 2016 (including their survivors receiving pension benefits), a minimum attained age of 60 with 20 years of service or 30 years of service regardless of age is required. Group 2 participants entitled to a deferred retirement allowance are eligible for health benefits upon attainment of the Medicare eligibility age.





Schedule G – Summary of Main System Provisions

Deferred Retirement Option Plan (DROP): Eligible Current Employees Class members may effectively retire and freeze their accrual of years of service with the System and defer receipt of retirement benefits, including retiree health benefits, for a period not to exceed five years while continuing City employment. For valuation purposes, current DROP participants are assumed to be active members, receiving health care benefits as an active employee. Service does not accrue while participating in the DROP and retiree health benefits are assumed to begin upon exit from active employment.

Members and Beneficiaries Assumed to be Eligible for Deferred Retiree Health Benefits as of December 31, 2016: Per Ordinance 336-2016 adopted by the City Council on October 26, 2016, members of Group C and their associated beneficiaries are eligible for retiree health benefits under the Select Plan based upon a minimum of 15 years of service. All other eligible members and their associated beneficiaries are eligible for retiree health benefits under the Model Plan based upon a minimum attained age of 60 with 20 years of service or 30 years of service regardless of age.

Dependents: A retiree may elect to cover an eligible spouse and/or eligible dependent children by paying the applicable retiree contribution rate for the specified enrollment tier.

Retiree Health Benefits

The System offers health care benefits (medical, prescription drugs, dental, and vision coverage) to eligible retirees, beneficiaries, and their dependents before and during Medicare eligibility.

Under the provisions of Ordinance 85-2011, beginning January 1, 2012, members who retired prior to September 1, 2007, and who establish their annual household income to be less than \$30,000, are eligible to receive medical and prescription drug coverage under the Secure Plan. Those members who retired prior to September 1, 2007 who do not qualify for coverage under the Secure Plan may elect medical and prescription drug coverage through either the Select Plan or Model Plan based upon eligibility.

Those members of Group C or those members who retired on or after September 1, 2007 (including those employees who retired under a special incentive plan in 2007) but prior to January 1, 2016 may elect medical and prescription drug coverage through the Select Plan. Those members not eligible for the Secure Plan or the Select Plan may elect coverage under the Model Plan.





Schedule G – Summary of Main System Provisions

Retiree Contributions

Participants covered by the Secure Plan do not contribute towards the cost of medical and prescription drug coverage. Group 1 participants covered by the Select Plan contribute an amount equal to five percent of the full cost of medical and prescription drug benefits of the retiree group with costs adjusted based upon the Medicare eligibility age (age 65). Group 1 participants covered by the Model Plan contribute an amount equal to ten percent of the full cost of medical and prescription drug benefits of the retiree group with costs adjusted based upon the Medicare eligibility age (age 65). Group 2 participants will pay the portion of the full cost of medical and prescription drug benefits of the coverage option for which they are eligible as determined by the point system.

Retiree Contribution As A Percentage of Cost		
Points	Select Plan	Model Plan
90+	5%	10%
80 – 89	25%	
70 – 79	50%	
60 – 69	75%	
Less than 60	75% of full premium for retiree only (spouse or dependent coverage is not available)	

Active Service Death Benefits

A surviving spouse, eligible dependent child, and orphan receiving survivor pension benefits as a result of death during employment of an eligible active member is eligible to receive retiree health benefits based upon the eligibility and terms applicable to the associated member.

Medicare Part B Premium Reimbursement

Under the provisions of Ordinance 85-2011, beginning January 1, 2012, CRS no longer reimburses the Medicare Part B premiums for retirees and spouses. As such, it is assumed CRS has no liability under GASB 43 and 45 for Medicare Part B premium reimbursements.

All Medicare eligible retirees and dependents are responsible for the payment of the required Medicare Part B premiums. Retiree health benefits participants who are eligible for but do not enroll or maintain their enrollment in Medicare Part B will be responsible for the medical expenses Medicare Part B otherwise would have paid. As such, it is assumed CRS is the secondary payer for Medicare Part B benefits.

Dental Benefits

Under the provisions of Ordinance 85-2011, beginning January 1, 2012, all members electing to participate in the dental plan will be required to pay the full cost of dental coverage. As such, it is assumed CRS has no liability under GASB 43 and 45 for dental benefits.





Schedule G – Summary of Main System Provisions

Vision Benefits

Under the provisions of Ordinance 85-2011, beginning January 1, 2012, all members electing to participate in the vision plan will be required to pay the full cost of vision coverage. As such, it is assumed CRS has no liability under GASB 43 and 45 for vision benefits.





Schedule H – Tables of Membership Data

TABLE 1
SCHEDULE OF ELIGIBLE ACTIVE MEMBERS BY AGE AND SERVICE
AS OF DECEMBER 31, 2017

Age	Completed Years of Service							Total
	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30+	
Under 20	17							17
Avg Pay	*							*
20 - 24	90	2						92
Avg Pay	10,404	*						11,261
25 - 29	107	23	3					133
Avg Pay	31,857	48,588	*					35,285
30 - 34	137	108	32	1				278
Avg Pay	45,331	53,639	58,356	*				50,040
35 - 39	106	98	58	32	2			296
Avg Pay	44,796	57,608	55,682	60,218	*			53,074
40 - 44	85	76	61	62	23			307
Avg Pay	48,107	62,382	59,890	66,121	68,722			59,164
45 - 49	55	81	75	77	53	46	2	389
Avg Pay	41,068	61,740	65,788	62,591	63,323	72,339	*	61,223
50 - 54	90	59	58	84	79	177	24	571
Avg Pay	55,783	53,412	56,508	62,291	69,873	68,440	66,783	62,904
55 - 59	99	48	56	63	70	168	34	538
Avg Pay	53,520	56,055	57,337	57,771	62,064	66,588	71,575	60,975
60 - 64	66	39	34	42	36	82	26	325
Avg Pay	42,618	55,668	61,860	58,343	64,378	66,585	71,353	58,985
65 - 69	24	7	13	15	13	15	7	94
Avg Pay	41,013	*	*	*	*	*	*	54,814
70 & Over	37	7	6	3	4	3	1	61
Avg Pay	13,026	*	*	*	*	*	*	27,688
Total	913	548	396	379	280	491	94	3,101
Avg Pay	39,805	56,913	59,308	61,461	65,123	67,325	69,735	55,516

Average Age 47.9

Average Service 12.7

* Average pay is not shown for age / service groups with less than 20 participants.

With the December 31, 2015 closure of the retiree health benefits plan, this exhibit reflects only those active members (full time and part-time), including current DROP participants, who are assumed eligible to receive retiree health benefits.

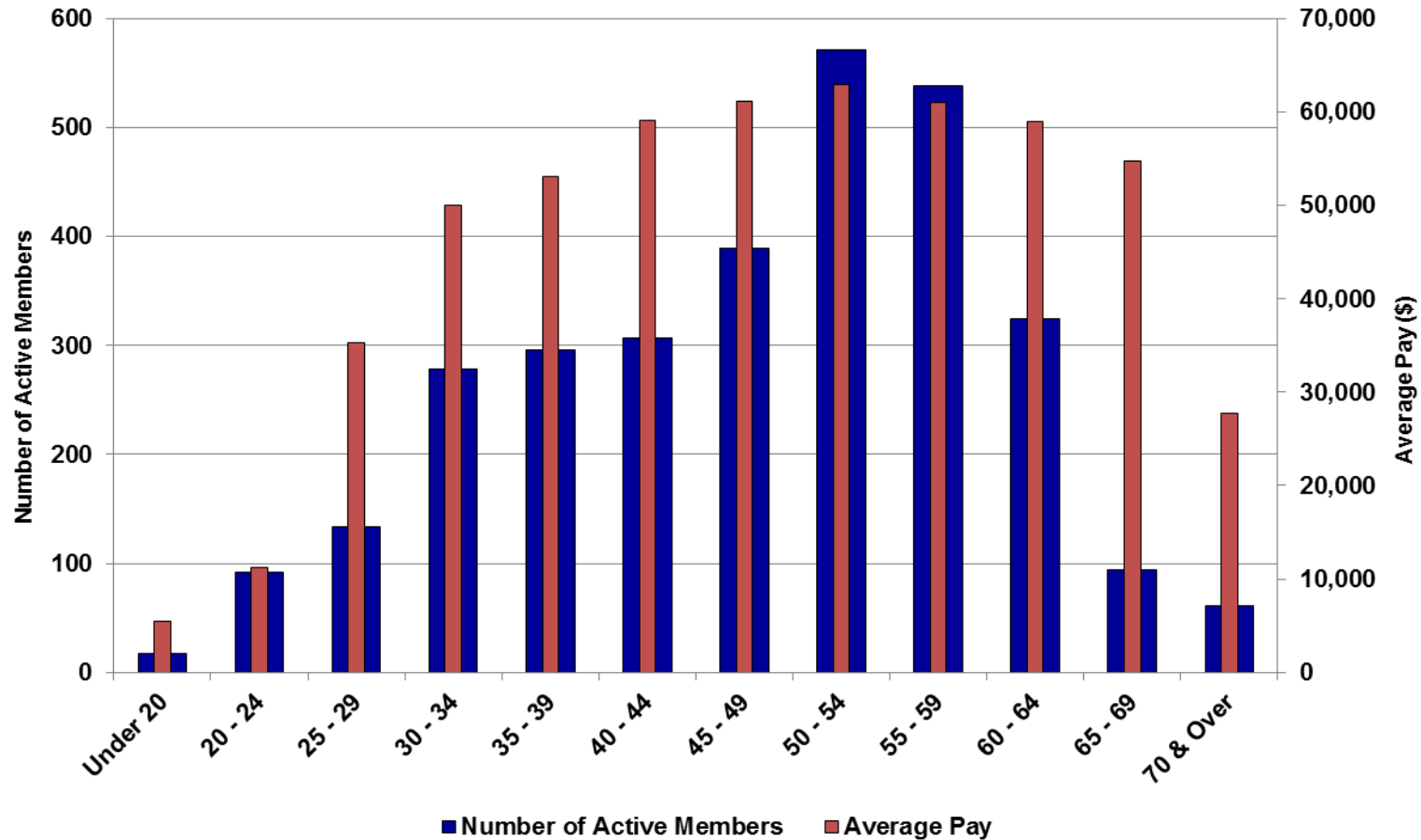




Schedule H – Tables of Membership Data

CHART 1

DISTRIBUTION OF ELIGIBLE ACTIVE MEMBERS BY AGE
AS OF DECEMBER 31, 2017



With the December 31, 2015 closure of the retiree health benefits plan, this exhibit reflects only those active members (full time and part-time), including current DROP participants, who are assumed eligible to receive retiree health benefits.





Schedule H – Tables of Membership Data

TABLE 2

SCHEDULE OF
PARTICIPATING RETIREES / SURVIVING SPOUSES
AND COVERED SPOUSES BY AGE
AS OF DECEMBER 31, 2017

Attained Age	Number of Retirees / Surviving Spouses	Number of Covered Spouses	Total
Under 40	0	1	1
40 – 44	2	3	5
45 – 49	2	6	8
50 – 54	24	46	70
55 – 59	176	124	300
60 – 64	536	285	821
65 – 69	818	366	1,184
70 – 74	691	274	965
75 – 79	479	161	640
80 – 84	419	108	527
85 – 89	284	33	317
90 – 94	183	10	193
95 – 99	65	2	67
Over 99	5	0	5
Total	3,684	1,419	5,103

In addition, there are 26 members and beneficiaries assumed to be eligible for deferred retiree health benefits.

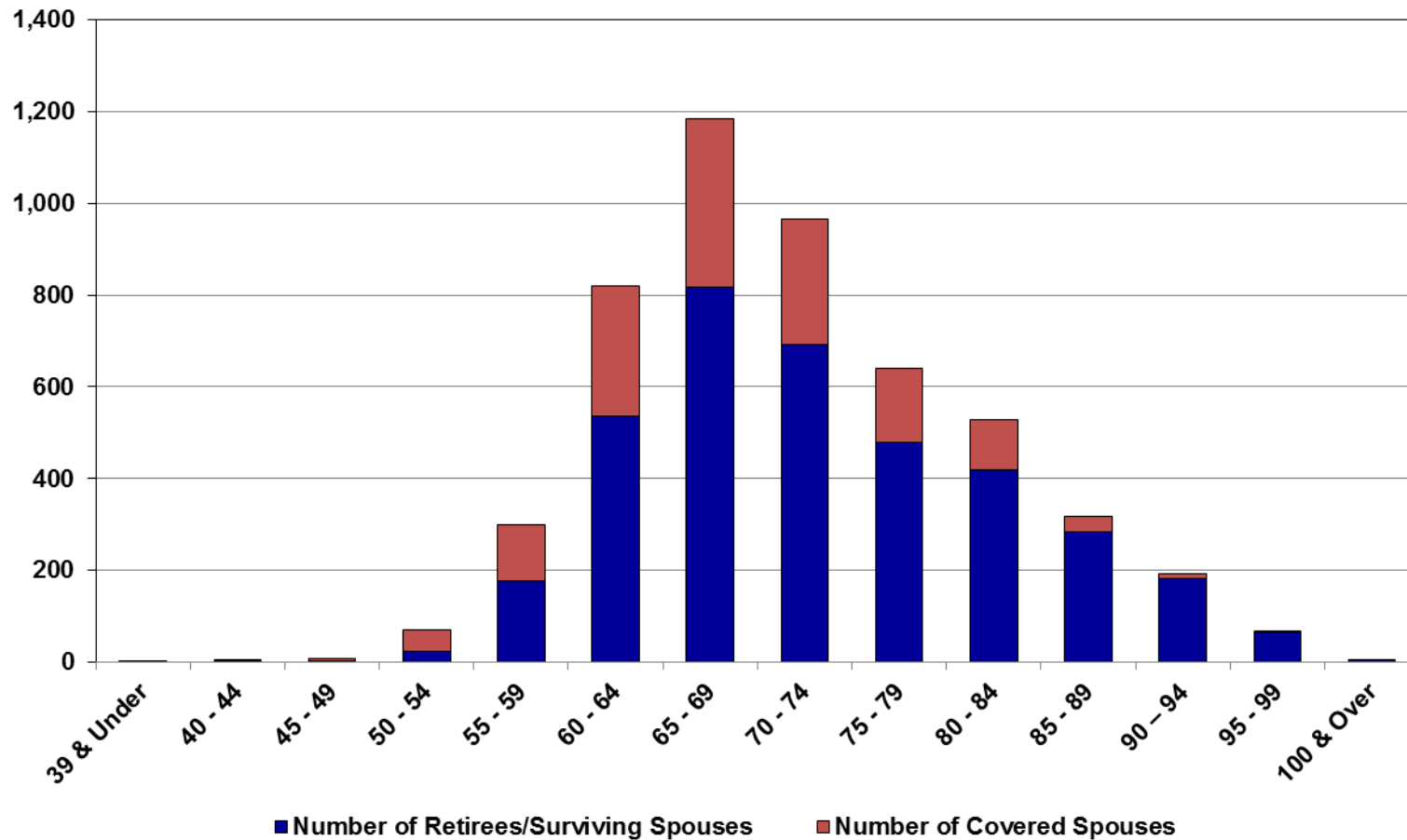




Schedule H – Tables of Membership Data

CHART 2

SCHEDULE OF PARTICIPATING RETIREES/SURVIVING SPOUSES AND COVERED SPOUSES BY AGE AS OF DECEMBER 31, 2017





Schedule H – Tables of Membership Data

TABLE 3

SCHEDULE OF
PARTICIPATING RETIREES / SURVIVING SPOUSES
AND COVERED SPOUSES BY HEALTH CARE PLAN
AS OF DECEMBER 31, 2017

Health Care Plan	Under Age 65	Over Age 64	Total
Secure Plan	10	137	147
Select Plan	1,073	3,752	4,825
Model Plan	122	9	131
Total	1,205	3,898	5,103

Tables 2 and 3 do not include those retirees who are not currently participating in the health care plan but may re-enter the plan in the future.





Schedule I – Analysis of Financial Experience

Gains & Losses in Unfunded Accrued Liabilities Resulting from Difference Between Assumed Experience & Actual Experience (\$ in Thousands)

Type of Activity	\$ Gain (or Loss) For Year Ending December 31, 2017	\$ Gain (or Loss) For Year Ending December 31, 2016
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	\$ (693)	\$ (1,371)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(282)	(123)
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(248)	346
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(637)	60
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss. Applies to salary-based benefits.	0	0
New Members. Additional unfunded accrued liability will produce a loss.	(600)	(1,232)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	6,507	5,406
Death After Retirement. If retirees live longer than assumed, there is a loss. If not as long, a gain.	4,107	4,726
Other. Miscellaneous gains and losses resulting from cost experience, changing demographics of the retired membership, changes in valuation software, data adjustments, timing of financial transactions, etc.	<u>6,972</u>	<u>4,988</u>
Gain (or Loss) During Year From Experience	<u>\$ 15,126</u>	<u>\$ 12,800</u>
Non-Recurring Items. Adjustments for plan amendments, asset transfers, assumption changes, or method changes.	<u>(48,461)</u>	<u>38,843</u>
Composite Gain (or Loss) During Year	<u>\$ (33,335)</u>	<u>\$ 51,643</u>

